

Remarks

The above Amendments and these Remarks are in reply to the Office Action mailed [date]. No fee is due for the addition of any new claims. A Third Information Disclosure Statement is submitted herewith, together with the appropriate fee.

Claims 1-18 were pending in the Application prior to the outstanding Office Action. In the Office Action, the Examiner rejected claims 1-18 under 35 U.S.C. 112, para. 2, further rejected claims 1-10 under 35 U.S.C. 103(a), and further rejected claim 1 for double patenting.

The present Response amends claims _____, leaving for the Examiner's present consideration claims 1-18. Reconsideration of the rejections is requested.

I. OBJECTIONS TO THE SPECIFICATION

1. Hyperlinks

The Examiner objected to the specification, pp. 2-4, on the ground that it contains an embedded hyperlink.

The hyperlinks have now been deleted, and it is submitted that this objection has been overcome.

2. Listed References

The Examiner has requested a copy of the references listed in Applicant's specification at p. 1, line 20 - p. 5, line 2.

Many of these references were already submitted in Applicant's 7/20/2001 IDS and already considered by the Examiner on 8/20/2003, as indicated by the initialed PTO-1449 returned to Applicant with the 8/28/2003 Office action.

As part of a Third Information Disclosure Statement that is being filed together with the present Response C, Applicant is submitting the remainder of the listed references that are in his possession. Not all of the listed references are being submitted because Applicant has not been able to locate copies of all the references on the list.

Applicant believes that the Examiner will find that these references neither teach nor suggest the invention, either singly or in combination with any other prior art references.

II. CLAIM REJECTIONS - 35 U.S.C. 112

The Examiner rejected claims 1-18 under 35 U.S.C. 112, second paragraph. Problems were identified by the Examiner in the two independent claims, claim 1 and claim 11. These are discussed below.

A. Claim 1

1. Identification of Actor

The Examiner rejected claim 1 on the ground that it was unclear which actor is to perform the steps called for in the claim.

As previously presented, claim 1 identified the actor in the preamble as "a first one of said agents".

In accordance with a telephone interview between the Examiner and the undersigned on June 2, 2004, for which the Examiner is thanked, claim 1 has now been amended to set forth the actor at the beginning of each individual method step rather than in the preamble. As amended, the claim now has the following form:

1. A computer-implemented method ..., the network including a first agent, ... comprising the steps of:

said first agent receiving ...;

said first agent querying ...; and

said first agent responding

The amendment does not affect the scope of the claim. Rather, it has been made because the Examiner felt that the actor might have been unclear when set forth in the preamble.

2. Relationship Among Agents

The Examiner also rejected claim 1 on the ground that the hierarchical relationship among the agents is not clearly defined, nor whether the "upchain agent", the "first agent", and the "plurality of downchain agents" are part of the "network of agents".

Claim 1 has been amended to define these relationships affirmatively in the preamble.

Again, since Applicant believes that these relationships were already defined as the claim as previously presented, Applicant believes that this amendment does not affect the scope of the claim.

Accordingly, it is respectfully submitted that the rejections of claim 1 under 35 U.S.C. 112 para. 2 have now been overcome.

B. Claim 11

The Examiner rejected claim 11 on the ground that in the limitation, "in response to said first query of said first agent", it was unclear if the first agent makes the first query or if the first query is made to the first agent. In the Office action, and in the telephone interview, the Examiner suggested that this be changed to, "in response to said first query to said first agent". This has been done.

Again, this change does not affect the scope of the claim.

Accordingly, it is respectfully submitted that the rejection of claim 11 under 35 U.S.C. 112 para. 2 has now been overcome.

III. DOUBLE PATENTING

The Examiner rejected claim 1 for double patenting over a combination of Hodjat '989 and Cheyer U.S. Patent No. 6,691,151 ("Cheyer").

The Examiner states that Hodjat teaches all limitations of claim 1 except for the limitations calling for natural language interpretation, a plurality of agents each immediately downchain of the first agent, and responding tentatively whether the at least part of a message is within the natural language interpretation domain of the first agent after the first agent receives at least one response from the agents immediately downchain of the first agent but before the first agent receives all responses from the agents

immediately downchain of the first agent. For these limitations, the Examiner cites Cheyer and refers Applicant to the rejection of claim 1 under 35 U.S.C. 103(a).

Cheyer does not teach all the limitations of claim 1 that are missing from Hodjat. Specifically, Cheyer does not teach a system in which a First agent responds to its Upchain agent *after* the First agent receives at least *one* response from its Immediately Downchain agents, but *before* the First agent receives *all* responses from its Immediately Downchain agents.

The deficiencies of Cheyer in this regard are explained in more detail below regarding the rejection of claim 1 under 35 U.S.C. 103(a). The Examiner is respectfully referred to that discussion.

Accordingly, it is respectfully submitted that the rejection of claim 1 for double patenting over a combination of Hodjat '989 and Cheyer has now been overcome.

IV. CLAIM REJECTIONS - 35 U.S.C. 103(a)

The Examiner rejected claims 1-10 as being unpatentable over a combination of Ueno and Cheyer. Applicant will discuss the rejected claims in sequence.

A. Claim 1

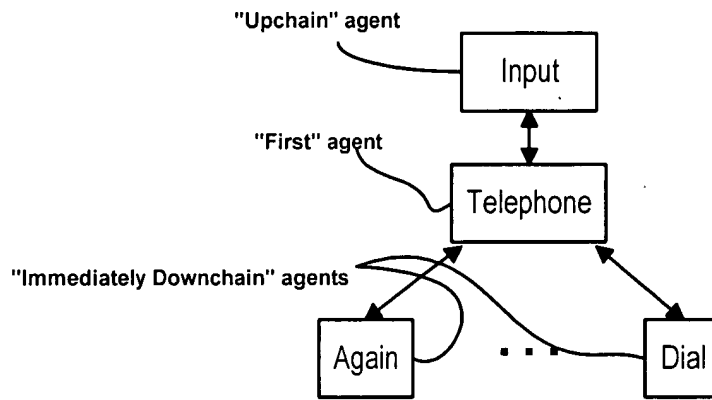
The Examiner states that Ueno teaches all the limitations of claim 1 except "a natural language interpretation" and "a plurality of agents immediately downchain of a first agent". The Examiner cites Cheyer as teaching these limitations.

However, as pointed out in Applicant's Response B, Ueno *also* fails to teach the limitation of Applicant's claim calling for the first agent to respond to the upchain agent *after* the first agent receives at least *one* response from the immediately downchain agents, but *before* the first agent receives *all* responses from the immediately downchain agents. Cheyer does not remedy this deficiency because Cheyer, too, fails to teach this limitation.

In addition, Cheyer's agent network operates by completely different principles than does Ueno, and a modification of Ueno to incorporate the cited teachings of Cheyer would change the basic principle under which Ueno was designed to operate.

1. The Claim Limitation

Claim 1 refers to at least 4 agents: an "Upchain" agent, a "First" agent, and a plurality of (i.e. at least two) agents "Immediately Downchain" of the First agent. Thus the First agent is intermediate between the Upchain agent and the Immediately Downchain agents. The hierarchical relationship among these four agents, as set forth clearly in the preamble of the claim as amended, is as follows. (As in Response B, the following diagram is taken from a portion of Applicant's Fig. 9):



(Portion of Applicant's Fig. 9)

The claim focuses on activities of the "First" agent, which is the Telephone agent in the above diagram. The Telephone agent is intermediate between the Upchain agent (the Input agent) and the Immediately Downchain agents (the Again and Dial agents).

The claim calls for the First agent to (1) receive a query from the Upchain agent, (2) query each of the Immediately Downchain agents, and (3) respond to the Upchain agent *after* the First agent receives at least *one* response from the Immediately Downchain agents, but *before* the First agent receives *all* responses from the Immediately Downchain agents.

In the example diagram above, this would mean that the Telephone agent receives a query from the Input agent. The Telephone agent queries both the Again agent and the Dial agent. The Telephone agent then responds to the Input agent *after* the Telephone agent has received a response from the Again agent, for example, but *before* the Telephone agent receives a response from the Dial agent, for example.

Neither Ueno nor Cheyer teaches the latter feature.

2. Ueno does not teach a system in which a First agent responds to its Upchain agent *after* the First agent receives at least *one* response from its Immediately Downchain agents, but *before* the First agent receives *all* responses from its Immediately Downchain agents

In the Office Action, the Examiner notes that in Ueno's Fig. 2, agentA does not receive all responses from its downchain agents before responding to its upchain agent userD. Specifically, the Examiner notes agentA does not receive a response from agentB before agentA sends its own response to userD.

But as pointed out in Applicant's Response B, Applicant's claim 1 calls for responding to the upchain agent not only before the First agent receives all responses from its immediately downchain agents, but also "*after* said first agent receives *at least one* response from said agents immediately downchain of said first agent". Ueno fails to satisfy this limitation because Ueno's agentA has not received a response from *any* of its immediately downchain agents (i.e. agentB) by the time it sends its own response to userD.

In fact Ueno *cannot* teach a limitation of the intermediate agent responding to the upchain agent at a time which is both after it receives one response from the immediately downchain agents, but before it receives all responses from the immediately downchain agents, since Ueno does not teach more than one agent immediately downchain of an intermediate agent.

And even if Ueno were modified to include more than one agent immediately downchain of an intermediate agent, there is no indication in Ueno that such an intermediate agent would or could send a response to its own upchain agent at a time which is both after it receives one response, and before it receives all responses, from the

immediately downchain agents. It is at least as likely, in Applicant's view, that the intermediate agent would await *all* responses from the immediately downchain agents before responding to the upchain agent, as is the case in both Cheyer and in Hodjat.

Thus **Ueno** does not teach a system in which a First agent responds to its Upchain agent after the First agent receives at least one response from its Immediately Downchain agents, but before the First agent receives all responses from its Immediately Downchain agents, as called for in Applicant's claim 1.

3. **Cheyer also does not teach a system in which a First agent responds to its Upchain agent *after* the First agent receives at least *one* response from its Immediately Downchain agents, but *before* the First agent receives *all* responses from its Immediately Downchain agents**

Nor does Cheyer remedy Ueno's deficiency. The Examiner cites Cheyer, col. 19, lines 5-32 and Fig. 11 as teaching the missing limitation, but that is not what the cited language of Cheyer says.

The cited excerpts from Cheyer describe a process in which the facilitator agent first receives a "goal request" (step 1102 of Cheyer's Fig. 11). The facilitator parses the "goal request" to construct a "goal satisfaction plan" (step 1106). From the "goal satisfaction plan", the facilitator determines the required "sub-goals" (step 1108). The facilitator then transmits the "sub-goal" requests to selected client agents of the facilitator (step 1112), and receives the results of the "sub-goal" requests (step 1114).

The Examiner identifies the following language specifically as teaching the above claim limitation:

certain sub-goals may be sent to separate agents in parallel, while transmission of other sub-goals may be postponed until receipt of particular answers. Further, certain requests may generate multiple responses that generate additional sub-goals. (Cheyer, col. 19, lines 20-24).

Initially, Applicant assumes that in applying Cheyer to Applicant's claim, the Examiner is considering Cheyer's Facilitator agent to constitute Applicant's First agent. But if so, then the above language excerpt does not say anything about when the *facilitator* agent responds to *its* upchain agent. This language speaks only about sub-goals and responses communicated between the facilitator agent and its *downchain* agents.

In fact, Cheyer says specifically that the original requested goal has to be *completed* before the facilitator agent returns results to the requesting agent:

Once the responses have been received, the facilitator determines whether the original requested goal has been completed in a step 1118. If the original requested goal has not been completed, the facilitator recursively repeats the operations 1106 through 1116 [constructing a new goal satisfaction plan and transmitting more sub-goals to selected downchain agents]. Once the original requested goal is completed, the facilitator returns the results to the requesting agent 1118 and the operations are done at 1120. (Cheyer, col. 19, lines 26-32, emphasis added).

Thus neither does **Cheyer** teach a system in which a First agent responds to its Upchain agent *after* the First agent receives at least *one* response from its Immediately Downchain agents, but *before* the First agent receives *all* responses from its Immediately Downchain agents, as called for in Applicant's claim 1.

4. The Combination of Ueno and Cheyer fails to teach the missing limitation, and it would be unobvious to add it

Thus as the Examiner has recognized, Ueno fails to teach a plurality of agents immediately downchain of an intermediate agent, and also fails to teach a system in which the intermediate agent responds to its upchain agent *after* the intermediate agent receives at least *one* response from its immediately downchain agents, but *before* it receives *all* responses from its immediately downchain agents, as called for in Applicant's claim 1.

The Examiner cites Cheyer as teaching a plurality of agents immediately downchain of an intermediate agent, but Cheyer does not teach the latter limitation, that the intermediate agent respond to its upchain agent *after* the intermediate agent receives at least *one* response from its immediately downchain agents, but *before* it receives *all* responses from its immediately downchain agents.

The Examiner therefore still has not cited a reference that teaches a plurality of agents immediately downchain from a first agent, where the first agent can respond to its own parent *after* the first agent receives at least *one* response from its immediately downchain agents, but *before* it receives *all* responses from its immediately downchain agents, as called for in Applicant's claim 1.

Nor would it have been obvious to *further* modify the *combination* of Ueno and Cheyer to incorporate this feature. It is at least as likely, in Applicant's view, that the intermediate agent would await *all* responses from the immediately downchain agents before responding to the upchain agent. *All* examples of prior art systems applied by the Examiner which have a plurality of immediately downchain agents operate this way (Hodjat, Cheyer); *none* operate in the manner called for in the claim.

Accordingly, since there is at least one limitation of Applicant's claim 1 that is not taught by any reference cited by the Examiner, even when combined together, claim 1 should be patentable.

5. The Proposed Combination is Inappropriate Because it would Change Ueno's Principle of Operation

In addition to the above, Ueno and Cheyer operate according to completely different principles, and an attempt to combine Cheyer's teaching of multiple immediately downchain agents into Ueno would change the principle of operation by which Ueno was designed to operate.

In Ueno, roughly described, and using Ueno's Fig. 2 an accompanying description as an example, a user module userD first sends a message to agentA requesting information concerning a specific item. When the request message is received by agentA and it is found that the requisite information is not available in agentA, then agentA generates a plurality of propagation messages to pass the information request on to agentB and then agentC. When the propagation message is received by agentB, it is again found that the required information is not available at agentB, so agentB redirects the propagation message to agentC. If agentC achieves successful matching of the message contents with its script and thereby obtains the necessary response information set, it generates a response message back to agentA with the requested information. AgentA then returns the requested information back to userD. (Ueno, col. 11, line 63 through col. 13, line 8; Fig. 2).

This is a sequential mode of operation in which each agent, upon discovering that it does not have the requested information, passes the request on to another agent. When one

agent in the chain finds that it does have the requested information, it returns the information to the first agent (agentA, presumably considered the "First" agent in Applicant's claim 1), which then returns it in a response to the originator of the request userD. There is no central agent that knows the capabilities of all the other agents.

In Cheyer, on the other hand, again roughly described, the facilitator agent is a specialized server agent that is responsible for coordinating agent communications and cooperative problem-solving. (Cheyer, col. 6, lines 61-63.) It maintains a registry of the capabilities and services of each of its downchain agents, which are referred to in Cheyer as "clients" of the facilitator "server". An originating client agent sends a "goal request" to the facilitator. The facilitator parses the goal request to construct a "goal satisfaction plan", and then determines the required "sub-goals". The facilitator then transmits the "sub-goal" requests to selected client agents. Certain sub-goals may be sent to separate agents in parallel, while transmission of other sub-goals may be postponed until receipt of particular answers. Further, certain requests may generate multiple responses that generate additional sub-goals. Once the responses have been received, the facilitator determines whether the original requested goal has been completed. If not, then the facilitator constructs a new goal satisfaction plan and transmits more sub-goals to selected downchain agents. Once the original requested goal is completed, the facilitator finally returns the results to the originating requesting agent. (Cheyer, col. 19, lines 5-32.)

In contrast to Ueno's agent-sequential model, this is a client-server model in which one central agent (the facilitator, presumably the "First" agent called for in Applicant's

claim 1) coordinates and controls the problem-solving effort based on its own knowledge of the capabilities and services its various client agents.

In the Examiner's proposed combination of Ueno and Cheyer, Applicant presumes that the Examiner would substitute Cheyer's facilitator agent and its downchain client agents in place of Ueno's agentA and agentA's downchain agents agentB and agentC. That is the only way, Applicant believes, that Ueno could be modified such that his intermediate agent (the First agent in Applicant's claim) can have a plurality of agents each "immediately downchain" of the First agent as called for in Applicant's claim. (If that is not what the Examiner proposes, then it is respectfully requested that the Examiner set forth more clearly how he believes Cheyer could be combined into Ueno.)

But that would completely change the principle of operation by which Ueno was designed to operate. Ueno is designed to operate using an agent-sequential model, in which each agent determines for itself whether it has the requested information. If Cheyer's facilitator were substituted for Ueno's agentA, on the other hand, then the combined network would operate according to a client-server model, in which one agent coordinates and controls the problem-solving effort based on its own knowledge of the capabilities and services its various client agents.

It is well established that obviousness cannot be found in the combination of two references where the combination would change the principle of operation of the primary reference. Since a combination of Cheyer with Ueno would change the principle of operation of Ueno, it is respectfully submitted that such a combination would be improper.

6. Summary of Problems with the Art Rejection of Claim 1

Accordingly, it is respectfully submitted that claim 1 should be patentable over the cited art for at least these reasons:

- None of the cited references teach a plurality of agents immediately downchain from a first agent, where the first agent can respond to its own parent *after* the first agent receives at least *one* response from its immediately downchain agents, but *before* it receives *all* responses from its immediately downchain agents;
- It would not have been obvious to modify the *combination* of Ueno and Cheyer to incorporate this feature, since it is at least as likely that the intermediate agent in the combined system would await *all* responses from the immediately downchain agents before responding to the upchain agent; and
- It would be improper to combine Ueno and Cheyer in the first place because such a combination would change the basic principles under which Ueno was designed to operate.

Accordingly, it is respectfully submitted that claim 1 should be patentable.

B. Dependent Claims 2-10

The Examiner rejected claims 2-10 as being obvious over the combination of Ueno and Cheyer.

These claims all depend ultimately from independent claim 1 and therefore are believed to be patentable for at least the reasons set forth above with respect to independent

claim 1. In addition, these claims each add their own limitations which, it is submitted, render them patentable in their own right.

Applicant has reviewed the grounds for rejection of these claims as stated by the Examiner and respectfully does not agree with the positions taken. Applicant also hereby incorporates by reference the points they raised in prior Responses for the independent patentability of these claims. Nevertheless Applicant does not believe it necessary to discuss his views on these claims further, since claim 1 is believed patentable as set forth above. Applicant respectfully reserves the right to present and enlarge upon his further points regarding these claims should it become necessary in the future.

Accordingly, claims 2-10 are believed to be patentable.

V. CONCLUSION

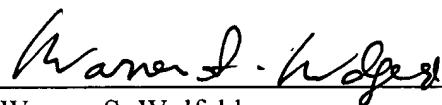
In addition to the amendments discussed specifically above, other claim amendments have been made in the present Response for the purpose of conforming to the changes made in independent claim 1. Additional changes have been made in some of the claims to correct antecedent basis issues.

In light of the above, it is respectfully submitted that all of the claims now pending in the subject patent application should be allowable, and a Notice of Allowance is requested. The Examiner is respectfully requested to telephone the undersigned if he can assist in any way in expediting issuance of a patent.

The Commissioner is authorized to charge any underpayment or credit any overpayment to Deposit Account No. 50-0869 for any matter in connection with this response, including any fee for extension of time, which may be required.

Respectfully submitted,

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